

The Answer sheet fourth grade (Zoology and Chemistry)(416z)

Answer of Q1:

Cytogenetics diagnosis of klinefelter's syndrome (xxy) , male, total ridge count is low, ATD angle is low, Hand wide, Fingers are long,. While Turner's is (XO), female and the total ridge count is high, ATD angle is large, hand is short, fingers is short.

The Answer of Q2:

a-Break: Unstained area equal or longer than the diameter of the chromatid.

Gap: Unstained area shorten than the diameter of the chromatid.

Ring: The chromosome lake free ends and form a continues ring.

Inversion: The inverted part of chromosome 180 degree after its break.

b-It's the steady of fingers prints and palm prints.

Types of finger prints: arch, loope and double loope.

Answer of Q3:

$2n=22$ chromosme

a) $2n-1 = 21$ chromosome

b) $2n+1 =23$ chromosome

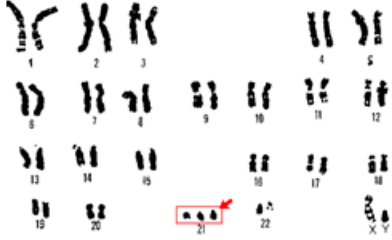

c) $2n+2 = 24$ chromosome

d) $2n+1+1= 24$ chromosome

e) $2n-2= 20$ chromosome

f) $n=11$ chromosome

Answer of Q4:

Klinefelter syndrome	Turner syndrome
It is due to trisomy (2n+1) of sex chromosome.	It is due to monosomy (2n-1).
Genetic Sex: XXY; generally female because of the presence of two X chromosomes.	XO; genetically sexless.
The individual has 47 Chromosomes(44+XXY). 	The individual has 45 chromosomes. (44+X). 
Gonadal sex: Testes present, but atrophied, gonadally male, presence of testis is due to Y chromosome.	No ovary; no testes; no gonadal sex.
Phenotype male, outward appearance male; penis, vas deferens, seminal vesicles present, but small sized, no spermatogenesis; sterility present.	Phenotype female, outward appearance; female; vulva, vagina and uterus present, but breasts do not develop owing to the absence of estrogens; no menstruation; sterility present.
Clinical symptoms: Male with slowly degenerating testes, enlarged breasts.	Short stature, webbed neck, female with poorly developed breasts and degenerated ovaries and rudimentary sexual characteristics.